SLEEP, SLEEP DISORDERS, AND BIOLOGICAL RHYTHMS		
Washington, D.C. Science Learning Standards: High School Biology		
Lesson	**Standard**	**Description**
1, 2, 3, 4	**B.1.1**	Know the elements of scientific methodology (identification of a problem, hypothesis formulation and prediction, performance of experimental tests, analysis of data, falsification, developing conclusions, reporting results) and be able to use a sequence of those elements to solve a problem or test a hypothesis. Also understand the limitations of any single scientific method (sequence of elements) in solving problems.
1, 2, 3	**B.1.2**	Know that scientists cannot always control all conditions in order to obtain evidence, and when they are unable to do so for ethical or practical reasons, they try to observe as wide a range of natural occurrences as possible so as to be able to discern patterns.
3, 5	**B.1.3**	Recognize the cumulative nature of scientific evidence.
1, 2, 3, 4	**B.1.4**	Recognize the use and limitations of models and theories as scientific representations of reality.
1, 2, 3	**B.1.5**	Distinguish between a conjecture (guess), a hypothesis, and a theory as these terms are used in science.
1, 2, 3	**B.1.6**	Plan and conduct scientific investigations to explore new phenomena, to check on previous results, to verify or falsify the prediction of a theory, and to use a crucial experiment to discriminate between competing theories.
1, 2, 3, 4	**B.1.7**	Use hypotheses to choose what data to pay attention to and what additional data to seek, and to guide the interpretation of the data.
1, 3	**B.1.8**	Identify and communicate the sources of error (random and systematic) inherent in an experiment.
1, 3	**B.1.9**	Identify discrepant results and possible sources of error or uncontrolled conditions.
Pre-lesson, 1, 2, 3	**B.1.10**	Select and use appropriate tools and technology to perform tests, collect data, analyze relationships, and display data. (The focus is on manual graphing, interpreting graphs, and mastery of metric measurements and units, with supplementary use of computers and electronic data gathering when appropriate.)
All lessons	**B.1.11**	Formulate and revise explanations using logic and evidence.
All lessons	**B.1.12**	Analyze situations and solve problems that require combining concepts from more than one topic area of science and applying these concepts.
3	**B.1.13**	Apply mathematical relationships involving linear and quadratic equations, simple trigonometric relationships, exponential growth and decay laws, and logarithmic relationships to scientific situations.
Pre-lesson, 2, 3	**B.1.14**	Observe natural phenomena and analyze their location, sequence, or time intervals (e.g., relative ages of rocks and succession of species in an ecosystem).
3, 5	**B.1.15**	Explain that science discoveries can have both positive and negative implications, involve different decisions regarding ethics and allocation of resources (e.g., organ transplants, stem cell research, forest management and land use).
1, 3	**B.1.16**	Recognize and deal with the implications of statistical variability in experiments and explain the need for controls in

		experiments.
3	**B.3.10**	Explain that complex interactions among the different kinds of molecules in the cell cause distinct cycles of activities, such as growth and division.
3	**B.5.3**	Research and explain how natural selection provides a mechanism for evolution and leads to organisms that are optimally suited for survival in particular environments.
2, 3	**B.7.1**	Explain the major systems of the mammalian body (digestive, respiratory, reproductive, circulatory, excretory, nervous, endocrine, integumentary, immune, skeletal, and muscular) and how they interact with each other.
2, 3	**B.7.3**	Explain how the nervous system mediates communication between different parts of the body and the environment.
1, 2, 3	**B.7.4**	Describe that the nervous and endocrine systems maintain overall regulation of optimal conditions within the body by chemical communication.
3	**B.8.4**	Describe how the physical or chemical environment may influence the rate, extent, and nature of the way organisms develop within ecosystems.
Washington, D.C. Mathematics Learning Standards: Algebra I & Probability and Statistics		
Lesson	**Standard**	**Description**
Pre-lesson, 1, 3	**AI.N.1**	Use the properties of operations on real numbers, including the associative, commutative, identity, and distributive properties, and use them to simplify calculations.
1, 3	**AI.N.3**	Calculate and apply ratios, proportions, rates, and percentages to solve a range of consumer and practical problems.
Pre-lesson, 1, 3	**AI.P.4**	Translate between different representations of functions and relations: graphs, equations, sets of ordered pairs (scatter plots), verbal, and tabular.
1, 3	**AI.D.1**	Select, create, and interpret an appropriate graphical representation (e.g., scatter plot, table, stem-and-leaf plots, circle graph, line graph, and line plot) for a set of data, and use appropriate statistics (e.g., mean, median, range, and mode) to communicate information about the data. Use these notions to compare different sets of data.
1, 3	**PS.8**	Organize and describe distributions of data by using a number of different methods, including frequency tables, histograms, standard line and bar graphs, stem-and-leaf displays, scatter plots, and box-and-whisker plots.
1, 3	**PS.9**	Describe and explain how the relative sizes of a sample and the population affect the validity of predictions from a set of data.
Washington, D.C. Reading / English Language Arts Learning Standards: Grades 9 & 10		
Lesson	**Standard**	**Description**
All lessons	**9.LD-D.1**	Implement techniques to improve productivity of group discussions, including setting clear goals, understanding the purpose of the team project and the ground rules for decision-making, and setting deadlines.
All lessons	**9.LD-Q.2**	Summarize in a coherent and organized way the information and ideas learned from a focused discussion.
All lessons	**9.LD-V.8**	Determine the meanings of multiple-meaning words by using context.

All lessons	**9.IT-E.1**	Analyze the main or controlling idea in passages or paragraphs.
All lessons	**9.IT-E.5**	Support conclusions drawn from ideas and concepts in informational and technical passages.
All lessons	**9.R.1**	Formulate open-ended research questions and apply steps for obtaining and evaluating information from a variety of sources, organizing information, and presenting research.
All lessons	**9.W-E.2**	Produce functional texts (e.g., memos, e-mails, correspondence, project plans, proposals, bios) that: address audience needs; state purpose and context; and adopt a customary format, including proper salutation, closing, and signature when appropriate.
All lessons	**9.W-E.3**	Write interpretations of literary or expository reading that: exhibit careful reading, understanding, and insight; organize the interpretation around several clear ideas, premises, or images; and justify the interpretation through sustained use of examples and textual evidence.
All lessons	**9.EL.5**	Identify and use: correct and consistent verb tense (present, past, and future perfect and perfect progressive; regular and irregular verbs; transitive and intransitive verbs) and subject-verb agreement, and appropriate noun-pronoun agreement (nominative, objective, possessive, reflexive, and relative pronouns; pronoun/antecedent agreement; and clear pronoun reference).
All lessons	**9.EL.6**	Identify and use functional sentence structure. Make effective use of parallel structure. Place modifiers properly. Avoid run-on sentences, comma splices, and sentence fragments. Use different types of clauses and phrases, including adverb and adjective clauses. Use a variety of sentence structures, including compound and compound-complex sentences with effective coordination and subordination of ideas and parallel, repetitive, and analogous sentence structures.
All lessons	**10.LD-D.1**	Participate productively in self-directed teams for a particular purpose, including posing relevant questions; extracting essential information from others' input, building on the ideas of others, and contributing relevant information or ideas in group discussions; and summarizing orally, in a coherent and organized way, information and ideas learned.
All lessons	**10.LD-Q.2**	Formulate judgments about the ideas under discussion and support those judgments with convincing evidence.
All lessons	**10.IT-E.3**	Describe the controlling idea or specific purpose of passages and paragraphs and determine the essential elements that elaborate it.
All lessons	**10.IT-E.5**	Make relevant inferences by synthesizing concepts and ideas from a single reading selection.
All lessons	**10.IT-DP.6**	Synthesize information from multiple sources (e.g., maps, illustrations, schematic diagrams, manuals, product information, consumer publications) to draw conclusions about the ideas presented.
All lessons	**10.IT-DP.7**	Analyze the presentation of information.
All lessons	**10.R.1**	Formulate open-ended research questions and apply steps for obtaining and evaluating information from a variety of sources, organizing information, and presenting research.
All lessons	**10.EL.3**	Use ending punctuation, correct internal punctuation (commas, ellipses, colons, semicolons, parentheses), apostrophes for contractions and possessives, and correct punctuation for quotations (quotation marks, ellipses, brackets).
All lessons	**10.EL.4**	Produce legible work that shows accurate spelling and correct use of the conventions of punctuation and capitalization.

National Health Education Standards – Grades 9 – 12: cited from pre-publication document of National Health Education Standards, Pre K-12, American Cancer Society, December 2005 – August 2006		
Lesson	**Standard**	**Performance Indicator**
3, 5	**1.12.1**	Predict how healthy behaviors can impact health status.
4	**1.12.4**	Analyze how genetics and family history can impact personal health.
5	**1.12.5**	Propose ways to reduce or prevent injuries and health problems.
5	**1.12.7**	Compare and contrast the benefits and barriers to practicing a variety of healthy behaviors.
3	**1.12.8**	Analyze personal susceptibility to injury, illness, or death if engaging in unhealthy behaviors.
3	**1.12.9**	Analyze the potential severity of injury or illness if engaging in unhealthy behaviors.
4	**2.12.1**	Analyze how family influences the health of individuals.
3, 5	**2.12.8**	Analyze the influence of personal values and beliefs on individual health practices and behaviors.
5	**2.12.9**	Analyze how some health risk behaviors can influence the likelihood of engaging in unhealthy behaviors.
5	**2.12.10**	Analyze how public health policies and government regulations can influence health promotion and disease.
4, 5	**3.12.1**	Evaluate the validity of health information, products, and services.
5	**5.12.2**	Determine the value of applying a thoughtful decision-making process in health related situations.
5	**5.12.3**	Justify when individual or collaborative decision-making is appropriate.
5	**5.12.5**	Predict the potential short and long-term impact of each alternative on self and others.
5	**5.12.6**	Defend the healthy choice when making decisions.
5	**5.12.7**	Evaluate the effectiveness of health-related decisions.
3, 5	**7.12.1**	Analyze the role of individual responsibility for enhancing health.
5	**7.12.2**	Demonstrate a variety of healthy practices and behaviors that will maintain or improve the health of self and others.
5	**7.12.3**	Demonstrate a variety of behaviors to avoid or reduce health risks to self and others.
5	**8.12.2**	Demonstrate how to influence and support others to make positive health choices.
5	**8.12.4**	Adapt health messages and communication techniques to a specific target audience.